

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, DC 20554

In the Matter of )  
 ) GN Docket No. 17-199  
Inquiry Concerning Deployment of Advanced )  
Telecommunications Capability to All Americans in )  
a Reasonable and Timely Fashion )

To: The Commission

**EX PARTE OF THE SATELLITE INDUSTRY  
ASSOCIATION**

The Satellite Industry Association<sup>1</sup> submits this ex parte in response to the Commission's inquiry into whether the deployment of advanced telecommunications capability is reasonable and timely.<sup>2</sup> As discussed in more detail below, the Commission's analysis should recognize the important role and competition that satellite broadband providers play in the deployment of advanced telecommunications capability and use accurate measures to for analysis.

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<sup>1</sup> SIA Executive Members include: The Boeing Company; AT&T Services, Inc.; EchoStar Corporation; Intelsat S.A.; Iridium Communications Inc.; Kratos Defense & Security Solutions; Ligado Networks; Lockheed Martin Corporation; Northrop Grumman Corporation; OneWeb; SES Americom, Inc.; Space Exploration Technologies Corp.; SSL; and ViaSat, Inc. SIA Associate Members include: ABS US Corp.; Analytic Graphics Inc.; Artel, LLC; Blue Origin; DigitalGlobe Inc.; DataPath Inc.; DRS Technologies, Inc.; Eutelsat America Corp.; Global Eagle Entertainment; Globecom; Glowlink Communications Technology, Inc.; Hawkeye360; Hughes; Inmarsat, Inc.; Kymeta Corporation; L-3 Electron Technologies, Inc.; O3b Limited; Panasonic Avionics Corporation; Planet; Semper Fortis Solutions; Spire Global Inc.; TeleCommunication Systems, Inc.; Telesat Canada; TrustComm, Inc.; Ultisat, Inc.; and XTAR, LLC. For more information, visit [www.sia.org](http://www.sia.org).

<sup>2</sup> *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, Notice of Inquiry, FCC 17-109 (rel. Aug. 8, 2017) ("NOI").

## DISCUSSION

Today, the satellite industry provides satellite broadband services to approximately two million consumers across North America and also supports the U.S. government and businesses in meeting their important broadband needs. Rural, remote, and tribal areas, where terrestrial broadband infrastructure can be prohibitively expensive to deploy or install, have been long left behind by terrestrial broadband providers, but satellite broadband providers digitally integrate those underserved communities and provide their residents with quality and cost-effective Internet services.<sup>3</sup> Further, many satellite broadband operators are finding that there is a growing demand to provide competition to terrestrial broadband solutions for urban customers, especially as the speeds and capacity of satellite broadband networks continue to increase.

Satellite broadband is a dynamic and competitive product, and the industry continues to invest billions of dollars into innovations that will provide even greater capacity and higher speeds to its U.S. satellite broadband consumers. On March 16, 2017, with its deployment of EchoStar XIX, the world's highest-throughput satellite launched at the time, Hughes became the first and only U.S. satellite Internet service to offer FCC-defined broadband speeds across the continental United States. In a very short time thereafter, more than 100,000 of its customers in the United States were receiving the broadband defined service. These metrics are also steadily increasing.

As a result of EchoStar XIX, Hughes is able to offer more than double the capacity of its previous two-satellite configuration and deliver broadband-defined speeds of 25/3 Mbps for

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<sup>3</sup> See, e.g., *Ex Parte* Letter from Jennifer A. Manner, Vice President, Regulatory Affairs, Hughes Network Systems, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 at 1 (filed Oct. 9, 2015) (“[P]rice[] ... []and the lack of inside wiring in prefabricated/modular homes[] often lead[s] consumers to choose satellite broadband service – even where cable broadband service is available.”).

residential users and 55/5 Mbps for enterprise users across the continental United States.

Hughes is also currently developing a new satellite with Space Systems Loral, planned for launch in early 2021, that will further increase speeds and capacity.<sup>4</sup> Dubbed EchoStar XXIV/JUPITER 3, this Ultra High Density Satellite will provide residential and commercial Internet and data services, including in-flight Internet and network backhaul for remote cellular towers. Other providers are also poised to deploy new upgraded satellites that will further increase capacities and speeds and expand the footprint of next-generation satellite services.<sup>5</sup>

Viasat has been offering 25/3 Mbps speeds in many areas of the country for over two years,<sup>6</sup> and has been expanding its 25/3 Mbps coverage and will be offering even higher speeds throughout its service footprint following commencement of service over the state-of-the-art ViaSat-2 and, in the near future, ViaSat-3. Indeed, ViaSat-2<sup>7</sup> will support peak speeds of 100-

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<sup>4</sup> Gallagher at 1; Kendall Russell, *SSL to Build Hughes' Next-Gen Ultra High Density Satellite*, Satellite Today (Aug. 9, 2017), <http://www.satellitetoday.com/telecom/2017/08/09/ssl-build-hughes-next-gen-ultra-high-density-satellite/>.

<sup>5</sup> See *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 15-191, 2016 Broadband Progress Report, 31 FCC Rcd 699 at note 155 (2016) (“2016 Broadband Progress Report”) (discussing the upcoming satellite deployment plans of Hughes, ViaSat, and O3b). ViaSat, for example, launched ViaSat-2 on June 1, 2017, and it expects to be able to provide services by 2018 at speeds in excess of the FCC’s current benchmarks. See *ViaSat Announces First Quarter Fiscal Year 2018 Results*, Cision (Aug. 8, 2017), <http://www.prnewswire.com/news-releases/viasat-announces-first-quarter-fiscal-year-2018-results-300501439.html>.

<sup>6</sup> See *ViaSat Unveils Fastest Home Satellite Internet Service in the U.S. with the New Exede WiFi Modem and a 25 Mbps Plan* (Nov. 18, 2015), available at <http://investors.viasat.com/releasedetail.cfm?ReleaseID=943346>.

<sup>7</sup> See *ViaSat-2 Satellite Reaches Geostationary Orbit: Successfully Receives and Transmits First Data from Space* (Dec. 5, 2017), available at <http://investors.viasat.com/releasedetail.cfm?ReleaseID=1050708>.

plus Mbps and ViaSat-3 will provide over one terabit per second (1,000 Gbps) of throughput, expanding coverage and further increased speeds and capacity.<sup>8</sup>

In addition, multiple companies propose to invest in non-geostationary satellite orbit (“NGSO”) constellations to offer low-latency broadband services throughout the U.S. and in virtually every corner of the globe. These constellations represent billions of dollars of new investment in spacecraft, ground networks and launch, with many of these NGSO applicants planning to deploy networks before the end of this decade. The FCC received over 15 NGSO applications in three active processing rounds for systems constellations in the Ku- and Ka-bands and V-band. The Commission has already granted U.S. market access to applicants OneWeb, Telesat and Space Norway<sup>910</sup> with several further applications pending approval.

SES’ O3b constellation of satellites in non-geostationary Medium Earth Orbit (“MEO”) provides low latency, fiber-like capability and enables broadband connectivity speeds of up to 2 Gbps, allowing for application acceleration and network optimization.<sup>11</sup> The MEO constellation enables connectivity on a variety of mobile platforms, including for passengers and crew on

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<sup>8</sup> See, e.g., *ViaSat Announces Third Quarter Fiscal Year 2016 Results* (Feb. 9, 2016), available at <http://investors.viasat.com/releasedetail.cfm?ReleaseID=954130>.

<sup>9</sup> *WorldVu Satellites Limited, Petition for a Declaratory Ruling Granting Access to the U.S. Market for the OneWeb System*, IBFS File No. SAT-LOI-20160428-00041 (adopted June 22, 2017).

<sup>10</sup> *Space Norway AS Petition for Declaratory Ruling Granting Access to the U.S. Market for the Arctic Satellite Broadband Mission*, Order and Declaratory Ruling, IBFS File No. SAT-PDR-20161115-00111 (adopted November 2, 2017); *Telesat Canada Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat’s NGSO Constellation*, IBFS File No. SAT-PDR-20161115-00108 (adopted November 2, 2017).

<sup>11</sup> See Via Satellite, *Interview with Steve Collar CEO, O3b Networks*, (August 1, 2012), <http://www.satellitetoday.com/publications/2012/08/01/steve-collar-ceo-o3b-networks/>.

cruise ships,<sup>12</sup> and also enables key real-time broadband applications, including VOIP, video and voice conferencing, video streaming, and cloud-based services. Non-geostationary satellites also play an essential role in disaster recovery; SES's MEO constellation has helped restore 4G/LTE connectivity in disaster-affected areas, including hurricane-ravished Puerto Rico.<sup>13</sup> To further expand the availability of connectivity for mobility and broadband application, SES is adding non-geostationary satellite capacity with eight new current generation satellites beginning in 2018 and a new constellation of seven next-generation MEO satellites, O3b mPOWER.<sup>14</sup> The new system, O3b mPOWER, will be capable of delivering multiple terabits of throughput globally to connect exponentially more people, businesses, and communities all over the world.

These strategic investments in greater satellite capacity, rising upload/download speeds, expanded coverage across the continental United States, and advancements in network engineering have made satellite broadband internet an excellent, competitive broadband offering.<sup>15</sup> As the Commission has noted, over 80% of satellite broadband subscribers

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<sup>12</sup> See FierceWireless, *SES Uses Beamforming To Steer Capacity On Ships*, (November 3, 2017), <https://www.fiercewireless.com/wireless/ses-uses-beamforming-to-steer-capacity-ships>.

<sup>13</sup> See Press Release, SES Networks, *SES Networks Works with Project Loon to Restore Connectivity in Puerto Rico*, (October 23, 2017), <https://www.ses.com/press-release/ses-networks-works-project-loon-restore-connectivity-puerto-rico#R5mQwfxMpF4XMUQJ.99>.

<sup>14</sup> See Press Release, SES Networks, *SES Opens New Era in Global Connectivity with O3b mPower*, (September 11, 2017), <https://www.ses.com/press-release/ses-opens-new-era-global-connectivity-o3b-mpower>.

<sup>15</sup> See *HughesNet Gen5 High-Speed Satellite Internet Service Now Available via GSA Schedule*, Yahoo! Finance (Mar. 30, 2017), <http://finance.yahoo.com/news/hughesnet-gen5-high-speed-satellite-130000395.html>. See also Andrew Burger, *HughesNet Claims First FCC Broadband Defined 25 Mbps Satellite Broadband Service*, Telecompetitor (Mar. 7, 2017), <http://www.telecompetitor.com/hughesnet-claims-first-fcc-broadband-defined-25-mbps-satellite-broadband-service/>.

experience actual download speeds exceeding the advertised speed.<sup>16</sup> It is therefore unsurprising that satellite broadband customers are just as satisfied as the customers of other types of broadband providers.<sup>17</sup> Satellite networks provide unrivaled coverage across the continental United States and in many cases have a more efficient infrastructure than terrestrial providers. Therefore, satellite broadband services digitally integrate the most inaccessible and underserved communities in the country, as well as users on the move, and moreover they play an integral role in providing competition in urban markets.

In light of the prevalence and success of satellite broadband services with consumers across the United States, the Commission should include satellite broadband services in its Section 706 analysis. Both Hughes and its competitor, Viasat, are providing broadband speeds that meet or exceed the Commission's 25/3 Mbps threshold, and both companies have invested, and are continuing to invest, in new satellites to expand the geographic area where such service is available and the number of customer that they can serve at those speeds. As Verizon observes, "broadband providers of all types and with all kinds of platforms – traditional telephone companies, cable operators, wireless providers, and satellite providers – are investing heavily to deploy new broadband technologies.... The resulting broadband deployment

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<sup>16</sup> *2015 Measuring Broadband in America: A Report on Consumer Fixed Broadband Performance in the United States*, FCC at 16, 33 (2015) ("2015 Measuring Broadband Report"), <http://data.fcc.gov/download/measuring-broadband-america/2015/2015-Fixed-Measuring-Broadband-America-Report.pdf>.

<sup>17</sup> Letter from Jennifer A. Manner, Vice President, Regulatory Affairs, Hughes Network Systems, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed Oct. 26, 2015), *attached to* Letter from L. Charles Keller, Attorney for Hughes Network Systems, Inc. to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed Oct. 26, 2016); Comments of ViaSat, Inc., WC Docket Nos. 10-90, 14-58, 14-259, at 5-6 (filed July 21, 2016) ("ViaSat CAF Comments") ("ViaSat's satellite broadband service ... now has an overall user satisfaction rating that is on par with that of leading cable-based broadband service providers").

nationwide is staggering.”<sup>18</sup> The strong and expanding availability of satellite broadband services supports a Commission finding that the deployment of advanced telecommunications capability is reasonable and timely.

Notwithstanding the high and increasing speeds and capacity offered by satellite broadband providers, the NOI suggests that satellite deployment data should be viewed differently than terrestrial deployment data. The NOI seeks comment on how to evaluate satellite deployment data based on faulty assumptions.<sup>19</sup> Satellite networks are no more capacity constrained than terrestrial networks. All networks, regardless of technology (whether terrestrial wireless, satellite or fiber, for example) are capacity-constrained to some degree and all lack the ability to simultaneously serve all potential users at particular levels of service. Satellite networks, as do terrestrial networks, scale over time to serve a growing customer base.

The question the FCC should be asking is not the amount of theoretical capacity on a network, but whether and how the network operator manages its network to minimize congestion and provide a high-quality experience to consumers. The satellite networks that are deployed allocate adequate per-subscriber bandwidth and use other techniques to offer consumers the best possible service quality. Indeed, many networks that are seen as “capacity-rich,” including fiber networks, experience congestion issues and bottlenecks that can limit the service experience that the consumer is receiving. Accordingly, the FCC, if it is to look at capacity of networks, needs to examine the correct measurement – network congestion.

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<sup>18</sup> Verizon comments at 3.

<sup>19</sup> NOI at para. 42.

## **CONCLUSION**

The Commission should find that the deployment of advanced telecommunications capability is reasonable and timely based on the strong evidence in the record of investment and broader availability of services meeting the Commission's benchmark, including from satellite broadband providers.

Respectfully submitted,

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